



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,754	09/12/2003	Nobuo Komeyama	K06-161131M/TBS	5978
21254	7590	04/01/2005	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			BINDA, GREGORY JOHN	
		ART UNIT		PAPER NUMBER
				3679

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<i>Office Action Summary</i>	Application No.	Applicant(s)
	10/660,754	KOMEYAMA ET AL.
	Examiner Greg Binda	Art Unit 3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 February 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4 and 7-37 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on various is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 5 & 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.
Election was made **without** traverse in the reply filed on Oct 20, 2004.

Drawings

3. The replacement drawings filed Feb 23, 2005 are objected to because the graph at Fig. 3 does not make sense. Contrary to convention, the expressed values along the y axis decrease as the distance from the origin increases.
4. The drawings are objected to because they fail to show the limitations of claims 9, 15, 27 & 33.
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because:
 - a. Page 7, line 9 includes the phrase "twos of the shafts". Its meaning is unknown.
 - b. Page 8, line 10 includes an undefined term, "SUJ2 2". Page 14, line 13 includes the undefined term "S54C of S55C". In the amendment filed Feb 23, 2005, applicant argues (without providing any evidence) that the terms "SUJ2," "S54C," and "S55C" are well known. Even if that is so, the argument fails to explain or justify usage of the terms "SUJ2 2" and "S54C of S55C" without definition.
 - c. Page 9, lines 21+ states that each race portion 2c after rolling burnishing is ensured with a hardness equal to or larger than Hv700 at a depth of at least 0.2mm from the surface, but Fig 2 shows that each race portion 2c after rolling burnishing has a hardness that is less than Hv700 at a depth equal to 0.4mm or more from the surface.

- d. Page 10, lines 20 & 21 includes the term, "the inventor of the application". Is this "inventor" the same entity that invented the disclosed invention or is it some other entity responsible only for "inventing" the instant application?
- e. Page 10, lines 20 & 21 includes the term "the application". If by this term applicant means the instant application, the term is inappropriate in a specification intended to be published as a patent.
- f. Page 13, line 15, the shoulder portion 2d is identified incorrectly.

2. The specification is objected to as failing to comply with 37 CFR 1.71 and 1.75(d)(1) because the detailed description fails to provide proper antecedent basis for the subject matter of claim 23.

Claim Objections

3. Claims 10 & 28 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim Rejections - 35 USC § 112

4. Claims 3, 13, 14, 18, 20, 31, 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has not pointed out where the following limitations are supported,

nor does there appear to be a written description of the limitations in the application as originally filed.

- a. Claim 3: "a residual stress at a depth of approximately 0.3mm from each of surfaces of the race portions and the shoulder portions . . . is . . . larger than 800 Mpa." To the contrary, Fig. 3 shows the residual stress at a depth of 0.3mm is approximately 800Mpa. No more. No less.
- b. Claims 13 & 31: all limitations therein. Only the race portions 2c are disclosed with the features in this claim. See page 8, line 23 through page 9, line 8.
- c. Claims 14, 20, 32: all limitations therein
- d. Claim 18: See item 'a' above

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "said roller-burnished race". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. Claims 1, 2, 10-12, 15-19, 28-30 & 33-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Gall, GB 2,117,088. Fig. 1 shows a cross joint comprising: a cross shaft member 10; needle rollers 24 and bearing cups 22. Fig. 1 shows the cross shaft member 10 comprises:

four trunnions 14 each comprising a neck portion and a race portion 30; and linear shoulder portions between adjacent neck portions. At page 1, line 82 and page 2, lines 24, 100, 128 & 129, Gall discloses that the race portions 30 are roller burnished which indicates the residual compressive stress at a depth of at least 0.3 mm is equal to or greater than 800MPa.

8. Claims 1, 2, 7, 8, 10-12, 16-19, 25, 26, 28-30 & 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Laster, US 3,039,183. Figs. 1 & 11 shows a cross joint comprising: a cross shaft member 23; needle rollers 60 and bearing cups 22 with race portions 56. Fig. 1 shows the cross shaft member 23 comprises: four trunnions 23a-23d (see also col. 2, lines 17 & 18) each comprising a neck portion and a race portion 55; and round shoulder portions between adjacent neck portions. At col. 2, lines 56 & 57 and col. 3, line 30, Laster discloses that the race portions 55 & 56 are roller burnished which indicates the residual compressive stress at a depth of at least 0.3 mm is equal to or greater than 800MPa.

9. Claims 1, 2, 4, 7, 8, 11, 12, 16, 17, 19, 21-26, 28-30 & 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Ostrovsky et al, US 3,655,466 (Ostrovsky). Fig. 1 shows a cross joint comprising: a cross shaft member 1; needle rollers 5 and bearing cups 4. Fig. 1 shows the cross shaft member 1 comprises: four trunnions 2 each comprising a neck portion and a race portion; and rounded shoulder portions between adjacent neck portions. At col. 1, lines 54 & 55 and col. 3, lines 22 & 23, the cross joint parts are disclosed as being made from carbon steel having a carbon content equal to or larger than 0.42 weight %.

10. Claims 1, 2, 7, 9-11, 16, 17, 19, 25, 27, 28, 29 & 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Laughlin, US 1,630,898. Fig. 3 shows a cross joint comprising: a cross shaft member 25; rolling members 8 and bearing cups 6. Fig. 3 shows the cross shaft member 25 comprises: four trunnions 26 each comprising a neck portion and a race portion; and bulge shaped shoulder portions between adjacent neck portions

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 9, 13, 14, 20, 27, 31 & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrovsky.

a. Claims 3, 13, 14, 20, 31 & 37. Ostrovsky discloses that the cross shaft shoulders are hardened but does not expressly disclose the particular values of hardness and residual compressive stress recited in the claims. However, it would have been obvious to one of ordinary skill in the art to design the cross shaft shoulders with these particular values of hardness and residual compressive stress, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

b. Claims 9 & 27. Ostrovsky shows all the limitations of the claims but does not expressly disclose the shoulders being shaped as a bulge. However, applicant has not disclosed having the shoulder take this particular shape solves any particular problem or is for any other particular purpose. As such, it would have been an obvious matter of design choice to make the shoulders in the shape of a bulge, since such a modification would have involved a mere change in the shape of the shoulders of the cross shaft. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Response to Arguments

13. Applicant's arguments filed Feb 23, 2005 have been fully considered but they are not persuasive.

a. Applicant argues that the prior art fails to show the claimed invention because Ostrovsky does not disclose roller burnishing and because neither Gall nor Laster discloses the cross shaft shoulders being subjected to roller burnishing. However, the limitation "roller burnishing" as it pertains to the elected invention, is a product-by-process limitation. Thus the argument is unpersuasive because the patentability of a product (e.g. the elected invention - a cross joint) does not depend on its method of production. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See also MPEP § 2113.

b. Applicant argues that Ostrovsky fails to show the claimed invention because Ostrovsky allegedly teaches away from roller burnishing the shoulders. This so,

applicant argues, because the shoulders are expressly disclosed at col. 1, lines 25-29 and col. 2, lines 31-40 as having a lower hardness. However, applicant has mischaracterized the teachings in the reference. The shoulder surfaces are clearly disclosed as hardened (see col. 3, lines 68-71) and so, does not “teach away” from the instant invention. The hardened surfaces at the shoulders are only described as being of *lower* hardness when comparing them to the hardened surfaces of the races, NOT to unhardened surfaces and/or untreated shoulders.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Linnemeier shows a cross joint.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 3679

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda
Primary Examiner
Art Unit 3679